

156-POSN CONNECTOR ASSEMBLY							ACCESSORIES STRAIN RELIEF
HOUSING		MODULE OPTIONS		CONTACTS			
STYLE	PART NO.	TYPE	PART NO.	LP	STRIP	DESCRIPTION	PART NO./CA-DIA-RNG
PLUG (With Standard Camshaft)	206740-1	Crimp	206743-1†	66555-3	-2	SGL 28-24 AWG	207317-1/.400-.600
				66750-3	-2	SGL 24-20 AWG	206737-1/.750-1.00
		IDC	206745-1†	PRELOADED		SGL 30-26 AWG	TWO COVERS REQD
				211914-1	PRELOADED	RIBBON CABLE	COVER INCLUDED
		POST (Formed)	206746-2	207385-1	PRELOADED	.026 by .270	—
				211812-1	PRELOADED	.026 by .340	
207385-1	PRELOADED			.026 by .550			
RCPT	206742-1	POST (Solid)	206746-2	PRELOADED	.025 ² by .230 (Without Guides)	—	
			206746-1†	PRELOADED	.025 ² by .230 (With Guides)		
			207526-1	PRELOADED	.025 ² by .550 (Without Guides)		
		IDC	208766-1	PRELOADED	RIBBON CABLE	COVER INCLUDED	

† Available in Housing Kits

Fig. 1

1. INTRODUCTION

This instruction sheet (IS) covers the assembly of AMP Cammed Rectangular (CR) 156-position connectors shown in Figure 1. Read these instructions and other references carefully before assembling the connectors.

NOTE

All dimensions on this sheet are in inches.

2. DESCRIPTION

Each connector assembly consists of a plug housing (with a camshaft and six snap-in 26-position

plug modules) and a receptacle housing (with six snap-in receptacle modules). The receptacle housing is normally panel-mounted.

The connector halves have polarizing ribs and slots for proper orientation and mating. By rotating the camshaft 90° (1/4 turn), the circuits are activated and the connector halves are locked together. The locking action results from the locking ridges entering the locking recesses, and the cam shoulder engaging the cam locking edge. Refer to Figure 1.

Except for crimp type, modules are supplied preloaded with contacts. *Plug contact options* include: crimp contacts assembled by the customer;

insulation displacement contacts (IDC) for discrete wire or ribbon cable; and contacts with .026-in. formed posts in three lengths. Except for IDC contacts for ribbon cable, all other contacts can be removed and replaced in plug modules.

Receptacle modules are preloaded with ribbon cable (IDC) contacts or with .025² solid-post contacts. Receptacle contacts *cannot* be replaced.

Accessories for 156-position assemblies include keying plugs, shield and strain relief kits, and module covers. Refer to Paragraph 5, INSTALLING ACCESSORIES.

3. CONTACT APPLICATIONS

A. Crimp-Type Contacts

Crimp-type contacts are available in loose-piece (LP) form for hand crimping, or reeled in strips for machine terminations, for two wire ranges: No. 28 to 24 AWG crimped with AMP Hand Tool 90309-1 (IS 7674), and No. 24 to 20 AWG crimped with AMP Hand Tool 90416-1 (IS 9137). Maximum cable insulation diameter is .049 in. Contact your AMP representative concerning semi-automatic and automatic machines for different production levels.

B. IDC Contacts for Discrete Wire

Insulation displacement contacts for discrete wire are preloaded in plug modules only, and they accept unstripped No. 26 to 30 AWG solid or 26 to 28 AWG 7-strand wire. Maximum cable insulation diameter is .049 in. Protective covers 206574-3 (two required) must be ordered separately. Modules (26 posn) can be terminated with the CHAMPOMATOR* machine, AMP Multiple Insertion Hand Tool 91113-1 (IS 7770), or AMP Hand Tool 91119-1 (IS 7784). Note that crimp contacts are normally used for replacement contacts in IDC plug modules.

C. IDC Contacts for Ribbon Cable

CR ribbon cable contacts are preloaded in both plug and receptacle modules and accept 26-conductor flat ribbon cable with .050-in. centerline spacing. Maximum thickness is $.035 \pm .005$ for No. 26 to 30 AWG solid or No. 28 AWG 7-strand ribbon cable. Note that 1) these contacts *cannot* be replaced, and 2) covers *are provided* and are latched during the termination process. Refer to Instruction Sheet IS 6699 for receptacle termination procedures using AMP Tooling Assembly 128000-1, and IS 9006 for 26-posn plug terminations using AMP Tooling Assembly 91172-1.

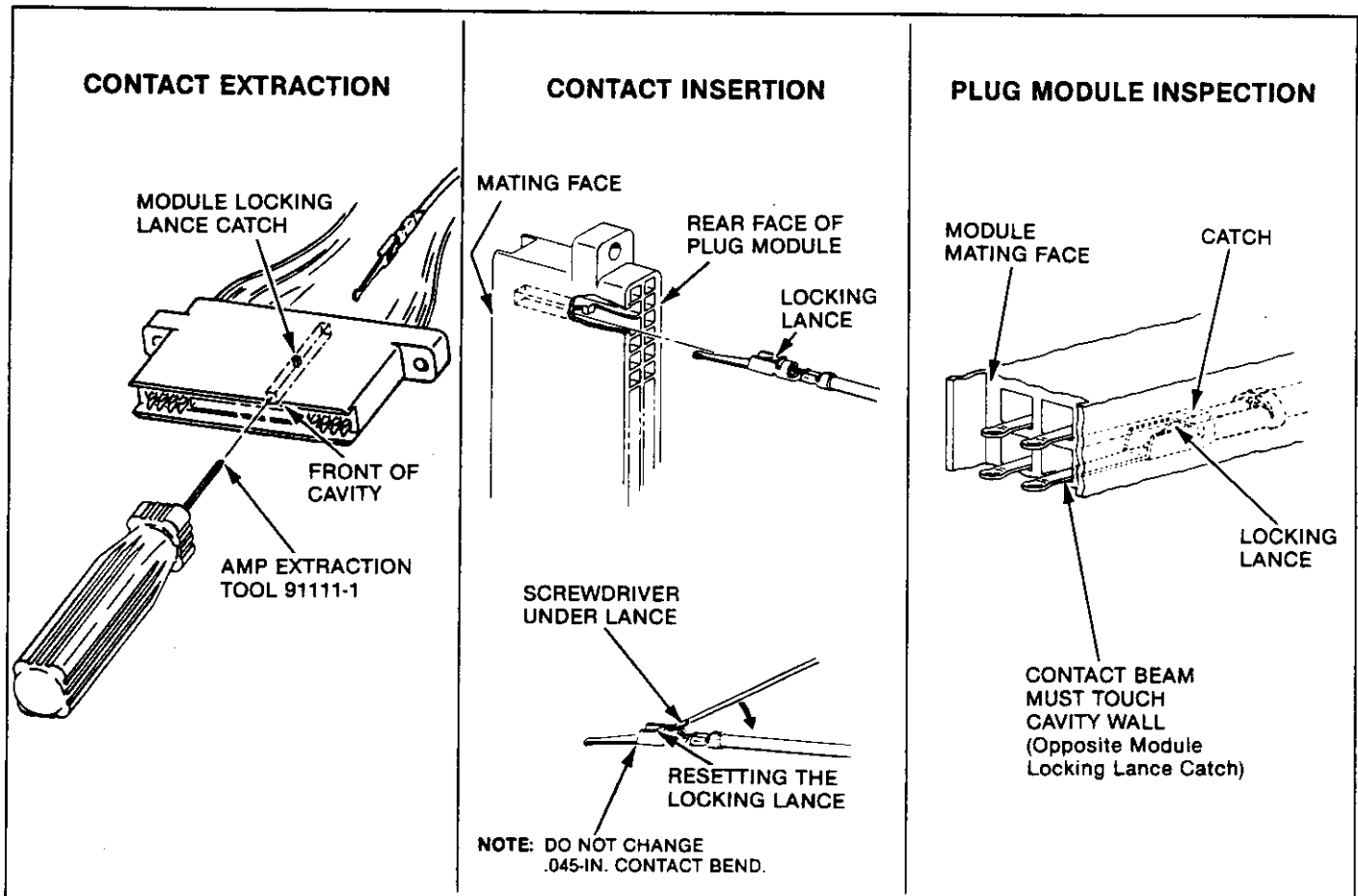


Fig. 2

D. Posted Contacts

Posted contacts can be terminated by standard wrap-type methods, by soldering, or by mating with an appropriate 26-position connector, such as AMP-LATCH* Novo, or AMPMODU* Mod IV, or other connectors on .100 by .100-in. centerlines which are designed to accept a .025² post. The post length of the CR contacts must be compatible with application requirements. Optional guides on receptacle modules with .025² posts aid in alignment of mating connectors.

NOTE *Posted contacts are replaceable in plug connectors only.*

E. Contact Replacement (Figure 2)

AMP Extraction Tool 91111-1 is used to remove replaceable CR contacts from modules: crimp type, posted plug, and IDC contacts for discrete wire. Refer to IS 7679 for contact removal procedures.

Replaceable plug contacts can be inserted into the modules by hand. Align and insert the contacts from the rear face of the module until the locking lance is latched on the catch of the cavity. For fragile wires or large bundles that hamper insertion by hand, use AMP Insertion Tool 91002 and IS 7347.

CAUTION *Do not change the preformed .045-in. bend in contact beams during crimping and installation. Make sure that plug contact beams are preloaded against the module cavity wall opposite from the locking lance catch. See Figure 2. If contact beam does not touch cavity wall, replace the contact in order to ensure adequate contact pressure (normal force) when the connector cam is actuated.*

Plug module contacts are designed for multiple insertions and extractions. If a contact does not lock on insertion, reset the lance with a screwdriver-type tool. The lance should be set level with the sides of the contact as shown in Figure 2. After insertion, inspect the mating face and make sure that contact beams touch the cavity wall opposite the locking catch.

4. ASSEMBLING CONNECTORS

When assembling plug and receptacle connectors, align the loaded modules so that positions 1 and 2 are topside toward the camshaft end of the connector assembly.

Proceed as follows:

A. Receptacle Connectors

1. Insert six loaded receptacle modules into the *back* of the receptacle housing until the module locking lances snap into place.
2. Make sure that the front of each module is parallel and flush with the front of the receptacle housing.

B. Plug Housing

1. Insert six loaded plug modules into the *back* of the plug housing until module locking lances snap into place.

NOTE

When inserting IDC modules for discrete wire, make sure covers are properly installed. To ensure clearance into plug housing, gently squeeze the two outside covers to ease entry of the module.

2. After modules are inserted, make sure that the *back* of the module is parallel and flush with the back of the plug housing.
3. Turn the retaining clip on the camshaft so that the open side of the clip is aligned with the camshaft slot. Align the camshaft with the back of the camshaft hole at the top of the plug housing. Notice that the camshaft handle is angled approximately 45° to ensure alignment of the camshaft stop with the relief slot in the housing. See Figure 3.
4. Insert the camshaft straight into the connector until it bottoms; then pull back to make sure it is locked in place. The end of the camshaft should be flush with the housing.
5. The camshaft can be removed from the plug housing by inserting extraction tool 447209-1 into the well adjacent to the camshaft on the mating face. This will depress locking tines, allowing the camshaft to be pulled out.

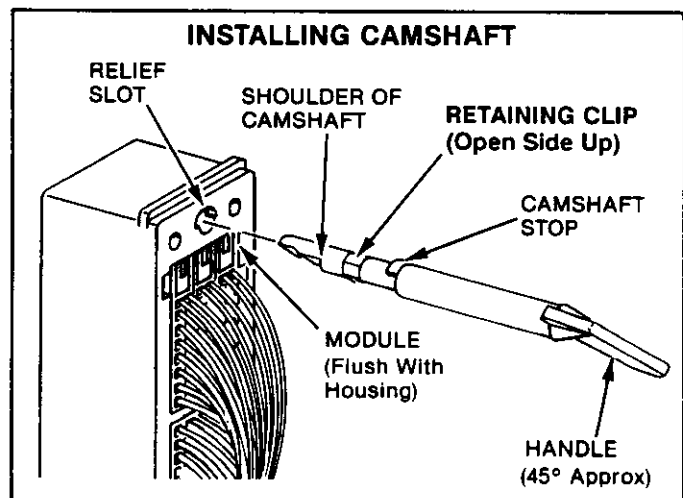


Fig. 3

NOTE

Plug and receptacle modules can be removed from housings with AMP Extraction Tool 91173-1 (IS 9005). Insert the tool at the front of the connector so that the tool tips rest over locking latches of the module. Squeeze the tool tips to depress locking latches and back module out of the connector.

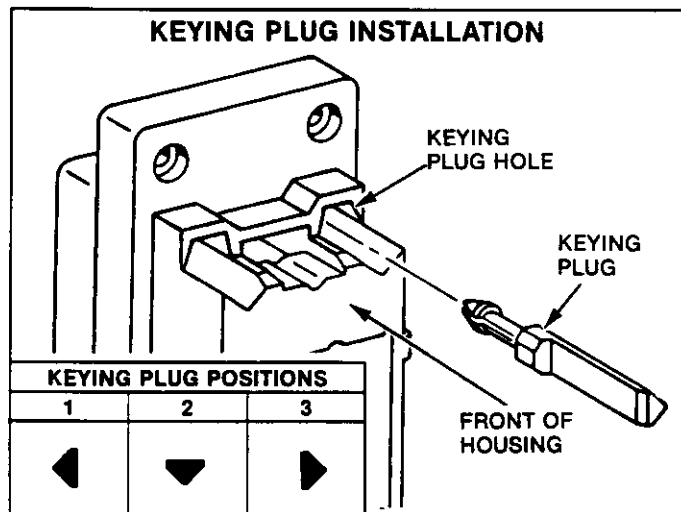


Fig. 4

5. INSTALLING ACCESSORIES**A. Keying Plugs**

Keying plug (No. 206545-1) can be placed in three different positions in the keying plug holes in each connector. To install, determine keying pattern and

align keying plug with keying plug hole in front of connector as shown in Figure 4. Insert keying plug straight into hole until it bottoms.

NOTE

Make sure that keying plugs in one connector are rotated 180° from those in the mating connector.

B. Attaching Strain Relief Kits

Strain relief kits for crimp-type or IDC plug modules for discrete wire are available for two bundle diameters: No. 206737-1 for .750- to 1.00-in. size, and No. 207317-1 for .400- to .600-in. diameters. Each kit includes two shield halves with four No. 6 self-tapping screws, and a two-piece cable clamp with two No. 4 self-tapping screws. The cable clamp can be placed in any of three positions within the shield to provide a 90°, 135°, or 180° cable exit. After selecting the proper kit for the wire-bundle size, refer to Figure 5 and proceed as follows:

1. Install both halves of cable clamp on the cable, using two No. 4 screws. Do not tighten screws.
2. Align one of the shield halves with the flanges on the plug connector. Make sure the camshaft hole is properly positioned with the camshaft. Slide the shield half onto the plug connector.
3. Determine required cable exit (90°, 135°, or 180°). Bundle the wires and insert the flanges of the stationary half of the cable clamp into the appropriate track.

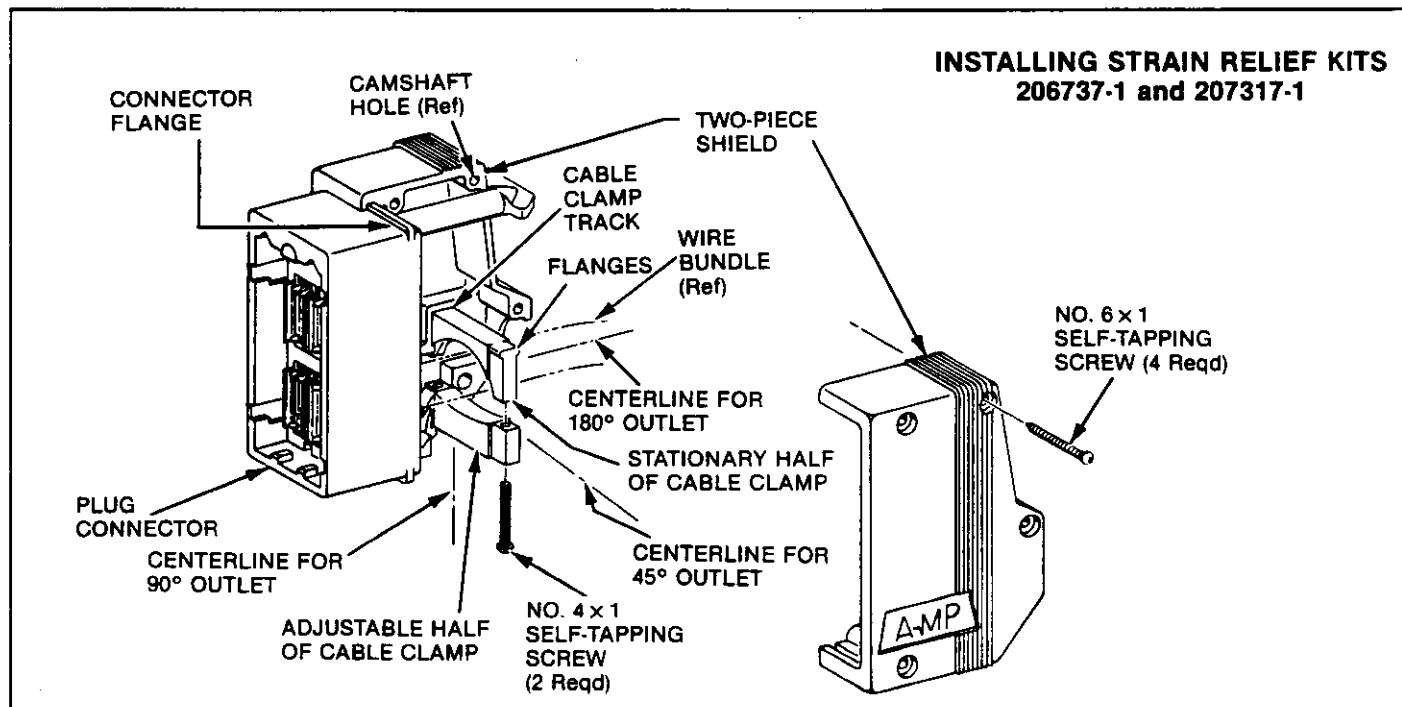


Fig. 5

4. Slide the remaining half of the shield onto the plug connector. Secure the two shield halves with four No. 6 screws.
5. Grasp the wire bundle and push a small amount of wire into the shield to relieve strain on the contacts. Alternate tightening cable clamp screws.

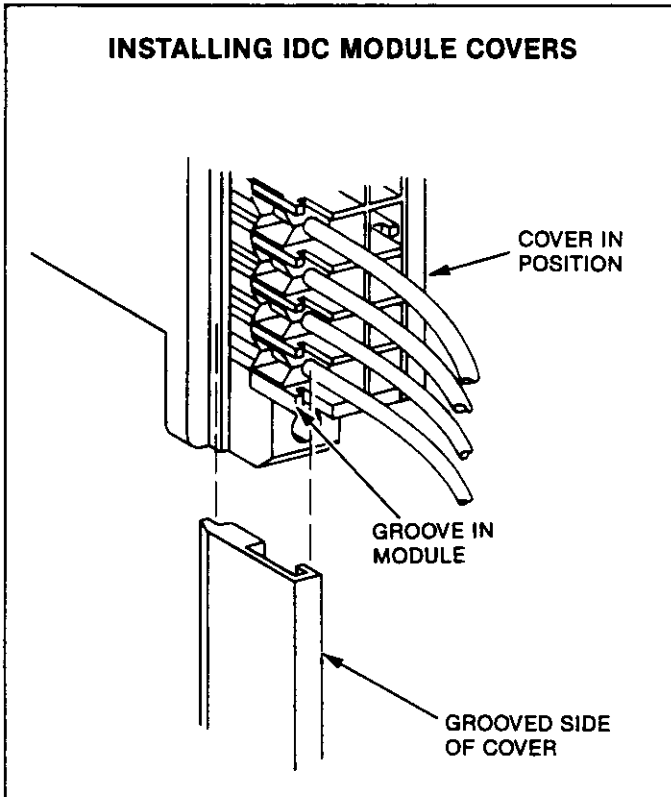


Fig. 6

6. INSTALLING IDC MODULE COVERS

Module covers are designed to protect wire terminations in IDC plug modules for discrete wire. Covers (two required) must be ordered separately and must be installed before inserting modules into the plug housing. To install, align grooved side of covers with grooves on each side of the module. Slide cover over contacts until it is flush at both ends. Refer to Figure 6.

7. PANEL MOUNTING

The receptacle half of the connector is designed for mounting to the *front or back* of a panel. Refer to

the dimensions provided in Figure 7 to make the panel cutout. Then mount the connector with four No. 4 screws, lockwashers, and nuts.

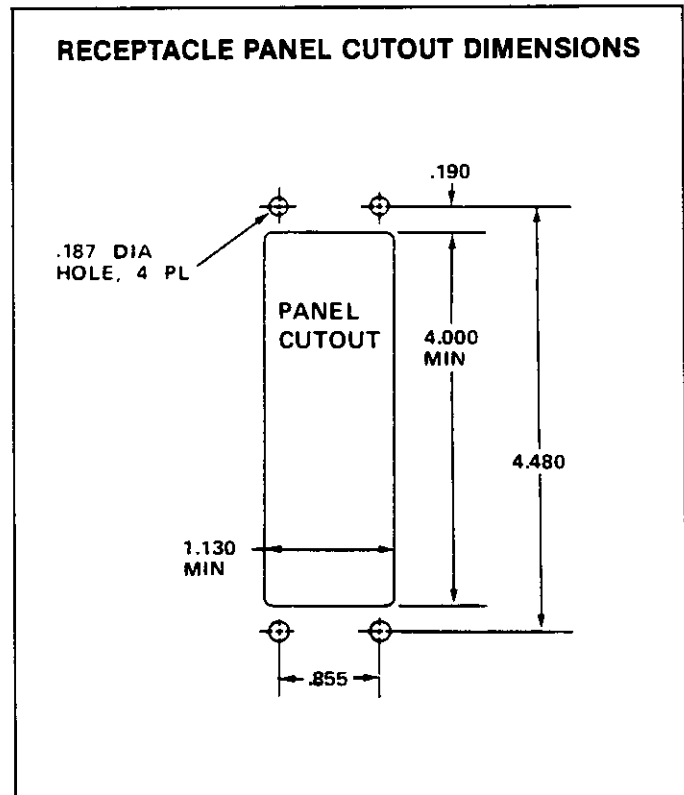


Fig. 7

NOTE

The layout in Figure 7 applies to standard receptacle connectors listed in Figure 1. For other versions, refer to appropriate AMP customer drawings or consult your local AMP representative.

8. ENGAGING/DISENGAGING CONNECTORS

To engage mating connectors, align polarizing ribs with polarizing slots. Push plug onto receptacle and rotate camshaft handle *clockwise* 1/4 turn (90°) to fully mate and lock connectors.

To disengage connectors, rotate camshaft handle *counterclockwise* 1/4 turn (90°) and pull plug from receptacle.